Amendments to the Claims:

1. (Original) A network, comprising:

a master subnet manager, wherein the master subnet manager is coupled to provide network topology data;

a requested traffic pattern for a packet; and

a connection controller, wherein the connection controller is coupled to receive the requested traffic pattern and the network topology data, compute an actual traffic pattern for the packet and communicate the actual traffic pattern to a source corresponding to the packet such that the network operates as a strictly non-interfering network.

2. (Original) The network of claim 1, wherein the connection controller comprises a packing algorithm, wherein the packing algorithm utilizes the requested traffic pattern and the network topology data to compute the actual traffic pattern.

3. (Currently Amended) The network of claim 1, wherein the network further comprises a plurality of ~~InfiniBand~~ switches, and wherein the connection controller:

calculates a plurality of routing trees for the plurality of ~~InfiniBand~~ switches;

calculates a plurality of ~~DLIDs~~ Destination Location Identifiers (DLID) and a set of forwarding instructions for each of the plurality of ~~InfiniBand~~ switches, wherein each of the plurality of DLIDs corresponds to one of the plurality of routing trees and one of a plurality of destinations in the network; and

populates a forwarding table of each of the plurality of ~~InfiniBand~~ switches in the network with the plurality of DLIDs and the set of forwarding instructions.

4. (Currently Amended) The network of claim 1, wherein computing an actual traffic pattern comprises executing a rearrangement algorithm and assigning one of a plurality of ~~DLIDs~~ Destination Location Identifiers (DLID) to the packet such that the network operates as a strictly non-interfering network.

5. (Currently Amended) The network of claim 4, wherein the network further comprises a plurality of ~~InfiniBand~~ switches, wherein the packet follows a path through at least a portion of the plurality of ~~InfiniBand~~ switches in the network, and wherein each of the portion of the plurality of ~~InfiniBand~~ switches forwards the packet according to the one of the plurality of DLIDs assigned to the packet such that the network operates as a strictly non-interfering network.

6. (Currently Amended) The network of claim 5, wherein each of the portion of the plurality of ~~InfiniBand~~ switches looks up the one of the plurality of DLIDs assigned to the packet in a forwarding table.

7. (Currently Amended) The network of claim 5, wherein each of the portion of the plurality of ~~InfiniBand~~ switches forwards the packet in accordance with the one of the plurality of DLIDs assigned to the packet as found in a forwarding table.

8. (Original) The network of claim 1, wherein the network is a Clos network.

9. (Currently Amended) A network comprising a computer-readable medium containing computer instructions for instructing a processor to perform a method of populating a forwarding table, the instructions comprising:

calculating a plurality of routing trees for a plurality of ~~InfiniBand~~ switches;

calculating a plurality of ~~DLIDs~~ Destination Location Identifiers (DLID) and a set of forwarding instructions for each of the plurality of ~~InfiniBand~~ switches, wherein each of the plurality of DLIDs corresponds to one of the plurality of routing trees and one of a plurality of end nodes; and

populating the forwarding table of each of the plurality of ~~InfiniBand~~ switches in the network with the plurality of DLIDs and the set of forwarding instructions and wherein the forwarding instructions create paths appropriate to make the network operate as a strictly non-interfering network.

10. (Original) The network of claim 9, wherein the network is a Clos network.

11. (Original) The network of claim 9, wherein each of the plurality of end nodes comprises a destination, and wherein the destination is identified by a BaseLID.

12. (Original) The network of claim 9, wherein calculating the plurality of routing trees comprises for each spine node in the network, calculating a shortest path from the spine node to each of the plurality of end nodes.

13. (Currently Amended) The network of claim 9, wherein each of the plurality of routing trees comprises at least a portion of the plurality of ~~InfiniBand~~ switches and corresponding plurality of links that form a shortest path from one of the plurality of end nodes to a spine node of the network.

14. (Currently Amended) A network comprising a computer-readable medium containing computer instructions for instructing a processor to perform a method of forwarding a packet, wherein the packet is created at a source and is addressed to a destination within the network, the instructions comprising:

executing a rearrangement algorithm for the network;

assigning one of a plurality of ~~DLIDs~~ Destination Location Identifiers (DLID) to the packet; and

the packet following a path through at least a portion of a plurality of ~~InfiniBand~~ switches from the source to the destination, wherein each of the portion of the plurality of ~~InfiniBand~~ switches forward the packet according to the one of the plurality of DLIDs assigned to the packet and wherein the network operates as a strictly non-interfering network.

15. (Canceled)

16. (Original) The network of claim 14, wherein the network is a Clos network.

17. (Currently Amended) The network of claim 14, wherein the packet following the path comprises looking up the one of the plurality of DLIDs assigned to the packet in a forwarding table at each of the portion of the plurality of ~~InfiniBand~~ switches along the path from the source to the destination.

18. (Currently Amended) The network of claim 14, wherein the packet following the path comprises each of the portion of the plurality of ~~InfiniBand~~ switches forwarding the packet in accordance with the one of the plurality of DLIDs assigned to the packet as found in a forwarding table at each the portion of the plurality of ~~InfiniBand~~ switches.